cdfa CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

PD/GWSS BOARD
bulletin

WINTER 2006 - 2007

MEET THE NEW PD/GWSS RESEARCH DIRECTOR...P.2

LOOK INTO WHAT'S HAPPENING ON THE RESEARCH FRONT...P.3

PD RESEARCH SYMPOSIUM FOCUSES ON PROGRESS...P. 4

San Luis Obispo–Still GWSS Free

San Luis Obispo is free of glassy-winged sharpshooters, and if George Donati, Vineyard Manager for Pacific Vineyard Company, has his way, it will stay that way. "We have Pierce's disease in some of our vineyards, so if the glassy-winged sharpshooter gets established here, it won't be good," said Donati.

But until the GWSS shows up, Donati is fighting another battle of sorts with landscapers and home owners. "See those citrus trees over there?" he said. "There's an agreement that in these homes next to the vineyard they wouldn't plant any citrus." It's a battle that Donati has been fighting and winning on a level since 2000.

Donati stands above a winery pointing to the parking lot. "In 2000, I tried to get them to landscape with plants unfriendly to sharpshooters. I gave the landscaper a list of plants research had shown would not host sharpshooters or PD, but the landscaper pitched a fit," he said. "So the winery owner had to make a decision between my list or the landscaper's, and the landscaper won," he said. "So he ordered all those plants usually seen around a winery, olive trees, oleanders, crepe myrtle and many others that sharpshooters favor."

But that wasn't the end of the story Donati points out. "When the trucks arrived, they filled that parking lot with plants for landscaping. I went down to look over the plants and found something I didn't like. I called our pest manager, who rushed over and found several GWSS egg masses on the plants. All the plants were immediately trucked back to the nursery."

While few of the plants from his list were planted, Donati has won some battles. "I said that if they insisted on planting oleander, at least I wanted to be able to cut them back as far as I wanted, and they agreed," said Donati. The result, as anyone can see today driving to the winery tasting room, is a landscape dotted with oleanders and not one of them taller than about four feet.

Donati has also had other successes like "curing" vines of PD with severe pruning. "We have some PD in one vineyard coming in from a neighboring alfalfa field, probably carried by bluegreen sharpshooters," he said. "We took several vines with PD, and using severe pruning techniques, the vines now appear free of PD."

With encroaching homes, sharpshooter-friendly landscapes and the constant threat of PD, Donati keeps his eyes open for ways to protect the vineyards he manages. "It's not going to get any easier," he says. But in the meantime, he'll use all the tools research has provided to try and keep one step ahead.

George Donati, checks on the progress of a vine that is recovering from PD after severe pruning.

Many Facets to New PD/GWSS Research Director

A woman bundled up in a heavy coat to keep out the chill strides along vineyard rows in the early morning light. Her three dogs trail closely behind as she looks over each vine. The sun has just made its appearance, but Nancy Irelan has already been up for an hour.

"Sleep is overrated," says Irelan.

Thanks to the Internet and telephones, Irelan solves the age-old dilemma of how to be in two places at once. From her home office in Penn Yan, New York, she balances running a burgeoning vineyard and winery with her husband and the many emails, conference calls and faxes it takes to keep up with her colleagues scattered around the country.

This past summer, Irelan stepped into the role of the PD/GWSS Board's research director. According to Board Chair Pete Downs, Irelan's familiarity with the PD/GWSS issue, coupled with her commitment to the industry and technical know-how, made her the ideal candidate for the position.

"Nancy brings valuable experience to the effort with her abilities to build coalitions, understand complex scientific research and convey the importance of that research to the rank-and-file members of the industry," Downs says. "Her scientific background and communication skills are exactly what we need at this time in the battle to understand, control and combat this potentially devastating disease."

When speaking with Irelan, one is impressed to hear of her work with the Pierce's Disease Control Program. Then she mentions she started a vineyard and winery with her husband in New York a few years ago. She is an active member of eight wine industry organizations, and, in her spare time, she trains her German Shepherd puppy Shazam to be a search and rescue dog. Each pursuit on its own has the potential to demand Irelan's full attention, but she happily commits herself to working from daybreak into the late evening hours.

"How do I manage to do it all? These are all things I really care about, so I make the time," Irelan says.

As research director, Irelan provides strategic oversight of the research program, including reviewing the program's efficiency and productivity, developing a strategic plan, managing active projects, and overseeing the ongoing search for new research avenues and opportunities. Irelan said she is committed to working with researchers in their environments, which requires her to travel around the globe. She manages to keep everything on track by setting her schedule weeks to months in advance and never leaves home without her BlackBerry™.

In addition to assisting with the day-to-day activities of the program, Irelan says her plan for the coming year is to evaluate the program, with the assistance of an independent scientific advisory board, and identify its strengths and weaknesses.

"We should have a complete assessment within a year which will establish the direction to take in the future," Irelan says.

Irelan has plenty of experience in the industry, both as a researcher and a grower. She became interested in the fields of crop improvement, breeding and biotechnology as an undergraduate at Glassboro State College in New Jersey. From there, she earned her doctorate in genetics from the University of California, Davis. Irelan then spent 12 years with Ernest & Julio Gallo Winery.

Vice President of Viticulture and Chemistry at Ernest & Julio Gallo Winery Dr. Nick Dokoozlian first met Irelan 20 years ago when they were both graduate students at UC Davis. After working with her at Gallo, Dokoozlian said he feels Irelan is well suited for her newest endeavor because she is one of the few in the industry who fully comprehends both the scientific and commercial aspects of the wine industry. "Nancy is a well-known and highly qualified scientist. She is dedicated, focused and relentless in her pursuit of excellence, both for herself and those around her," Dokoozlian says.

On The Research Front

Identifying Key Predators of the Various GWSS Life Stages

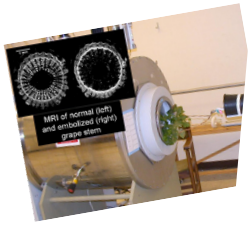
Project Leaders: Valerie Fournier, University of California, Weslaco, Texas; James Hagler, USDA, ARS; Kent Kaane, University of California, Berkeley; with Jesse de León, USDA, ARS

Researchers used DNA technology to detect GWSS remains in the guts of field-collected predatory insects. After screening over 700 predators, the team found spiders, assassin bugs, big-eyed bugs, plant bugs and praying mantis to be common predators of nymphs and adult GWSS life stages and the lacewing to be a common predator of the egg stage. The team continues to test thousands of additional species, such as beetles, ants, earwigs and other groups of spiders, in hopes of discovering other potential biological control candidates. Contact: James Hagler: jhagler@wcrl.ars.usda.gov

Magnetic Resonance Imaging: a Non-Destructive Approach for Detection of Xylem Blockages in Xylella Fastidiosa (Pierce's Disease) Infected Grapevines

Project Leaders: Ken Shackel and John Labavitch, University of California, Davis

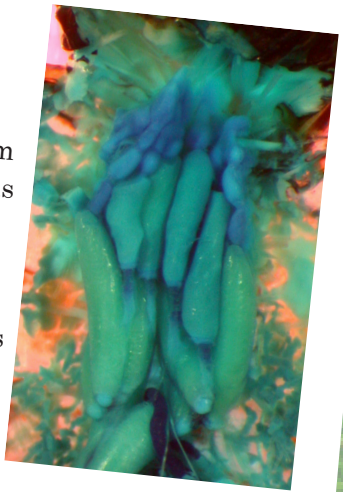
It is conventionally thought that the bacteria in the plant's vessels are solely responsible for blocking water movement in PD-infected grapevines. This study used MRI to observe water movement within infected grapevines. The results support the idea that vessel obstructions, and likely other PD symptoms, are caused by the grapevine's active response to the presence of PD, rather than to the direct action of the bacteria. The team proposes that the plant's cells are able to sense the presence of PD and, by blocking vessels, are attempting to slow the systemic movement of the bacteria. Contact: Ken Shackel - kashackel@ucdavis.edu



Reproductive Biology and Physiology of Female Glassy-Winged Sharpshooters: Morphology and Vitellogenesis Cycles

Project Leaders: Natalie A Hummel, USDA, ARS, KBUSLIRL with Frank G. Zalom and Christine Y.S. Peng, University of California, Davis

This study examined the reproductive cycle of female GWSS to define the timing and number of generations of GWSS in a given year. The team concluded that adult populations peak in June and October, and again in December in years with a third generation. The majority of egg production occurs in March and April, and again between July and August. Better characterization of reproductive events can improve the timing of chemical and biological control activities, such as the application of insecticides specifically targeting nymphs emerging from egg masses and the release of egg parasitoids.



Contact: Christine Peng - 530-752-0490 Frank G. Zalom - 530-752-3687 fgzalom@ucdavis.edu

Top - Researchers listen as important details of various research efforts are discussed.
Bottom – During the poster sessions researcher are able to get a better look at the progress that fellow researchers are making and discuss their projects one-on-one.

Pierce's Disease Research Symposium Focuses on Progress

For the sixth year, researchers from around the world met the last week of November during the annual Pierce's Disease (PD) Research Symposium in San Diego to discuss their research efforts in finding a solution to PD.

"It was truly great to hear from such a diverse group of researchers about the progress they are making on so many different fronts in our fight against PD. It is evident that our investments in research are paying off," said PD/GWSS Board Chairman Pete Downs.

During the Symposium, attendees heard about advances being made in the areas of developing PD-resistant wine grapevines and methods of inoculating vines against PD, as well as advancements being made in disease and vector management, monitoring and biology.

The two-day Pierce's Disease Research Symposium drew over 150 people. It was coordinated by the California Department of Food and Agriculture's Pierce's Disease Control Program and partially supported by the PD/GWSS Board. It is held annually to facilitate the flow of information, accelerate progress and increase scientific collaboration.

"Research is paving the way for us to manage Pierce's disease, and hopefully it may someday also find a solution," said Bob Wynn, head of CDFA's Pierce's Disease Control Program. "The Symposium provides all of our researchers with an ideal setting to report on their advancements and to network with other researchers. It also acts as a catalyst to help these scientists generate new ideas about how they can help growers deal with Pierce's disease and the glassy-winged sharpshooter."

As part of the PD Research Symposium, a 321-page proceedings was published. Copies of the proceedings can be downloaded from the CDFA Web site at www.cdfa.ca.gov/gwss/.

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